CN

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,943	03/19/2004	Glenn Robert Pierce	S4100-019 (43307.0023.3)	8072

7590 01/11/2005

Jeffrey R. McFadden
Womble Carlyle Sandridge & Rice, PLLC
P.O. Box 7037
Atlanta, GA 30357

EXAMINER	
KAUFFMAN, BRIAN K	

ART UNIT	PAPER NUMBER
3765	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No.	Applicant(s)	
	10/804,943	PIERCE ET AL.	
	Examiner	Art Unit	
	Brian K Kauffman	3765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-52 and 64-79* is/are allowed.

6)☒ Claim(s) *1-11 and 53-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims 3, 53, 55, and 64 are objected to because of the following informalities:

In regard to claims 3 and 55, the word "images" should be inserted after the word "digital".

In regard to claim 55, on line 6, the word "with" should be changed to "using". Lines 7 and 8 should be modified to read, "Sending the captured image of the preselected portion of the moving fabric web to a controller, wherein the controller".

In regard to claim 64, on line 6, the word "with" should be changed to "using". Line 7 should be modified to read, "Sending the captured image to a controller, wherein the controller".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-8, 53, and 55-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (5,867,878) in view of Baudry et al (6,690,987).

In regard to claims 1 and 3, Foster et al discloses a system for controlling the width of a moving fabric web that is moving through a fabric compactor system having a mechanical spreader, a fabric conveyor and a folder, wherein the mechanical spreader is located upstream of the fabric conveyor, and the fabric conveyor has a downstream end that delivers a moving fabric web to a folder, comprising: a camera (22) wherein the camera captures an image of a preselected portion of a moving fabric web and a controller (16), wherein the controller compares the calculated width of the moving fabric web to a first width set; causes a width setting of the mechanical spreader to change from the first width set point to a second width set point if the width of the preselected portion of the moving fabric web varies from the first width set point; and the image of the preselected portion of the moving fabric web is captured proximate to the downstream end of a fabric conveyor (col. 4, lines 12-40 and col. 5, lines 23-49). The camera is mounted to capture a series of digital images of the fabric web (col. 3, lines 44-47). Foster et al does not disclose that the controller receives the captured image of the preselected portion of the moving fabric web from the camera and calculates the width of the preselected portion of the moving fabric web using the received, captured image. Baudry et al does disclose that the controller receives the captured image of the

preselected portion of the moving fabric web from the camera and calculates the width of the preselected portion of the moving fabric web using the received, captured image (col. 3, lines 33-64). Requiring the controller to receive the captured image of the preselected portion of the moving fabric web from the camera and calculating the width of the preselected portion of the moving fabric web using the received, captured image provides a means to control the width of the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et al's system to require the controller to receive the captured image of the preselected portion of the moving fabric web from the camera and calculate the width of the preselected portion of the moving fabric web as taught by Baudry et al since using the received, captured image provides a means to control the width of the moving fabric web.

In regard to claim 4, Foster et al does not disclose that the camera captures an image of the entire width of the moving fabric web. Baudry et al does disclose that the camera captures an image of the entire width of the moving fabric web (col. 3, lines 46-49). It is advantageous for the camera to capture an image of the entire width of the moving fabric (col. 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify foster et al's system to require the camera to capture an image of the entire width of the moving fabric web as taught by Baudry et al because it is advantageous to do so.

In regard to claim 5, neither Foster et al nor Baudry et al specifically disclose that the CCD camera is mounted between about 60 and 100 inches above the moving fabric

web. However, the specification of the immediate invention discloses that the reason behind requiring the camera to be between 60 and 100 inches above the moving fabric web is to ensure that the CCD camera is able to capture the image of the entire width of the moving fabric. Baudry et al discloses that the camera be placed above the moving fabric web so as to cover the entire width of the moving fabric web (col. 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to require that the CCD camera be mounted between about 60 and 100 inches above the moving fabric web because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

In regard to claim 6, Foster et al does not disclose that the controller determines the amount of light reflected from the moving fabric web using the received, captured image of the preselected portion of the moving fabric web. Baudry et al does disclose that the controller determines the amount of light reflected from the moving fabric web using the received, captured image of the preselected portion of the moving fabric web. Determining the amount of light reflected from the moving fabric web is an integral process of interpreting the received, captured image of the preselected portion of the moving fabric web since the amount of reflected light varies as the width of the web varies. Since Baudry et al discloses that the controller interprets the received, captured image (col. 3, lines 33-64), Baudry et al also discloses that the controller determines the amount of light reflected from the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et

al's system to require the controller to determine the amount of light reflected from the moving fabric web using the received, captured image of the preselected portion of the moving fabric web as taught by Baudry et al since determining the amount of light reflected from the moving fabric web is an integral part of interpreting the received, captured image of the preselected portion of the moving fabric web.

In regard to claim 7, Foster et al discloses that the system include a platen (24) mounted proximate to the downstream end of the fabric conveyor, the platen having a color that contrasts with the color of the moving fabric web (col. 3, lines 58-62). Even though a back light panel is shown in fig. 1, Foster et al discloses that this device can be any contrasting surface.

In regard to claim 8, Foster et al does disclose that the controller locate the left and right edges of the moving fabric web based upon light contrast between the platen and the moving fabric (col. 3, lines 58-62). However, Foster et al does not disclose that the controller use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric web. Baudry et al does disclose that the controller use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric web (col. 3, lines 33-64). The captured, received image is an effective tool in determining the left and right edges of the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et al's system to require the controller to use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric

web as taught by Baudry et al because captured, received image is an effective tool in determining the left and right edges of the moving fabric web.

In regard to claims 53 and 55, Foster et al discloses a method for controlling the width of a moving fabric web that is moving through a fabric compactor system having a mechanical spreader, a fabric conveyor and a folder, wherein the mechanical spreader is located upstream of the fabric conveyor, and the fabric conveyor has a downstream end that delivers a moving fabric web to a folder, comprising: using a camera (22) to capture an image of a preselected portion of a moving fabric web and wherein a controller (16), compares the calculated width of the moving fabric web to a first width set; causes a width setting of the mechanical spreader to change from the first width set point to a second width set point if the width of the preselected portion of the moving fabric web varies from the first width set point; and the image of the preselected portion of the moving fabric web is captured proximate to the downstream end of a fabric conveyor (col. 4, lines 12-40 and col. 5, lines 23-49). The camera is mounted to capture a series of digital images of the fabric web (col. 3, lines 44-47). Foster et al does not disclose that the controller receives the captured image of the preselected portion of the moving fabric web from the camera and calculates the width of the preselected portion of the moving fabric web using the received, captured image. Baudry et al does disclose that the controller receives the captured image of the preselected portion of the moving fabric web from the camera and calculates the width of the preselected portion of the moving fabric web using the received, captured image (col. 3, lines 33-64). Requiring the controller to receive the captured image of the preselected portion of the

moving fabric web from the camera and calculating the width of the preselected portion of the moving fabric web using the received, captured image provides a means to control the width of the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et al's system to require the controller to receive the captured image of the preselected portion of the moving fabric web from the camera and calculate the width of the preselected portion of the moving fabric web as taught by Baudry et al since using the received, captured image provides a means to control the width of the moving fabric web.

In regard to claim 56, Foster et al does not disclose that the camera captures an image of the entire width of the moving fabric web. Baudry et al does disclose that the camera captures an image of the entire width of the moving fabric web (col. 3, lines 46-49). It is advantageous for the camera to capture an image of the entire width of the moving fabric (col. 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify foster et al's system to require the camera to capture an image of the entire width of the moving fabric web as taught by Baudry et al because it is advantageous to do so.

In regard to claim 57, neither Foster et al nor Baudry et al specifically disclose that the CCD camera is mounted between about 60 and 100 inches above the moving fabric web. However, the specification of the immediate invention discloses that the reason behind requiring the camera to be between 60 and 100 inches above the moving fabric web is to ensure that the CCD camera is able to capture the image of the entire width of the moving fabric. Baudry et al discloses that the camera be placed above the

moving fabric web so as to cover the entire width of the moving fabric web (col. 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to require that the CCD camera be mounted between about 60 and 100 inches above the moving fabric web because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller,* 105 USPQ 233.

In regard to claim 58, Foster et al does disclose creating a contrast between the moving fabric web and a reference (col. 3 lines 58-62). However, Foster et al does not disclose that the controller determines the amount of light reflected from the moving fabric web using the received, captured image of the preselected portion of the moving fabric web. Nor does Foster et al disclose that the contrast be sufficient to analyze the image based on the amount of reflected light. Baudry et al does disclose that the controller determines the amount of light reflected from the moving fabric web using the received, captured image of the preselected portion of the moving fabric web. Determining the amount of light reflected from the moving fabric web is an integral process of interpreting the received, captured image of the preselected portion of the moving fabric web since the amount of reflected light varies as the width of the web varies. Since Baudry et al discloses that the controller interprets the received, captured image (col. 3, lines 33-64), Baudry et al also discloses that the controller determines the amount of light reflected from the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et al's system to require the controller to determine the amount of light reflected from the

moving fabric web using the received, captured image of the preselected portion of the moving fabric web as taught by Baudry et al since determining the amount of light reflected from the moving fabric web is an integral part of interpreting the received, captured image of the preselected portion of the moving fabric web. Considering that Baudry et al teaches using the received, captured image to determine the amount of light reflected; Foster et al's method of creating a contrast between the moving fabric web and a reference would need to be sufficient to analyze the image based on the amount of reflected light because the purpose of the contrast is to aid in the analysis of reflected light. It would have been obvious to one having ordinary skill in the art at the time the invention was made to require Foster et al's method to require that the contrast be sufficient to analyze the image based on the amount of reflected light because the purpose of the contrast is to aid in the analysis of reflected light.

In regard to claim 59, Foster et al discloses that the system include a platen (24) mounted proximate to the downstream end of the fabric conveyor, the platen having a color that contrasts with the color of the moving fabric web (col. 3, lines 58-62). Even though a back light panel is shown in fig. 1, Foster et al discloses that this device can be any contrasting surface.

In regard to claim 60, Foster et al does disclose that the controller locate the left and right edges of the moving fabric web based upon light contrast between the platen and the moving fabric (col. 3, lines 58-62). However, Foster et al does not disclose that the controller use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric web. Baudry et al does

disclose that the controller use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric web (col. 3, lines 33-64). The captured, received image is an effective tool in determining the left and right edges of the moving fabric web. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Foster et al's system to require the controller to use the captured, received image of the preselected portion of the moving fabric web to locate the left and right edges of the moving fabric web as taught by Baudry et al because captured, received image is an effective tool in determining the left and right edges of the moving fabric web.

Claims 2 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (5,867,878) in view of Baudry et al (6,690,987) in further view of Pace et al (6,259,526). The combination of Foster et al and Baudry et al does not disclose that the camera is a CCD camera. Pace et al does disclose that the camera is a CCD camera (col. 3, lines 55-56). The CCD camera is an effective means for capturing an image. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combination of Foster et al and Baudry et al by using a CCD camera as taught by Pace et al because it is an effective means for capturing an image.

Claims 9-11 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foster et al (5,867,878) in view of Baudry et al (6,690,987) in further view of Foster et al (5,867,878).

In regard to claim 9, neither Foster et al's system nor Baudry's system requires the that the controller be a PID closed loop controller. However, Foster et al does

disclose that PID closed loop controllers are widely used in the art (col. 4, lines 30-32). It would have been obvious to one having ordinary skill in the art at the time the invention was made to require the controller to be a PID closed loop controller because PID closed loop controllers are widely used in the art.

In regard to claim 10, the combination of Foster et al and Baudry et al does not disclose that the controller causes the width setting of the mechanical spreader to change from the first width set point to the second width set point based upon proportional, integral, and derivative relationships between the first width set point and the second width point. However, since PID controllers are widely used in the art, and PID controllers operate based on proportional, integral, and derivative relationships, it would have been obvious to one having ordinary skill in the art at the time the invention was made to require the controller to cause the width setting of the mechanical spreader to change from the first width set point to the second width set point based upon proportional, integral, and derivative relationships between the first width set point and the second width point.

In regard to claim 11, the combination of Foster et al and Baudry et al does not disclose that the controller converts the sum of the proportional, integral, and derivative relationships into a pulse of power to the mechanical spreader. However, since PID controllers are widely used in the art, and PID controllers operate based on converting the sum of the proportional, integral, and derivative relationships into a pulse of power, it would have been obvious to one having ordinary skill in the art at the time the invention

was made to require that the controller convert sum of the proportional, integral, and derivative relationships into a pulse of power to the mechanical spreader.

Allowable Subject Matter

Claims 12-52 and 64-79 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 12-27 and 64-79 are allowed because they specifically require the controller to calculate the stitch count of the preselected portion of the moving fabric web using the received, captured image; compare the calculated stitch count to the first stitch count set point; and cause a compaction setting of the compaction chamber to change from the first stitch density set point to a second stitch density set point if the calculated stitch density of the preselected portion of the moving fabric web varies from the first stitch density set point.

Claims 28-52 are allowed because they specifically require a stitch count control subsystem wherein the second controller calculates the stitch count of the preselected portion of the moving fabric web using the received, captured image; compares the calculated stitch count to the first stitch count set point; and causes a compaction setting of the compaction chamber to change from the first stitch density set point to a second stitch density set point if the calculated stitch density of the preselected portion of the moving fabric web varies from the first stitch density set point.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Kauffman whose telephone number is (571)272-4988. The examiner can normally be reached on M-F every week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Calvert can be reached on (571)272-4983. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BKK
1/5/05

Peter Nerbun
Primary Examiner